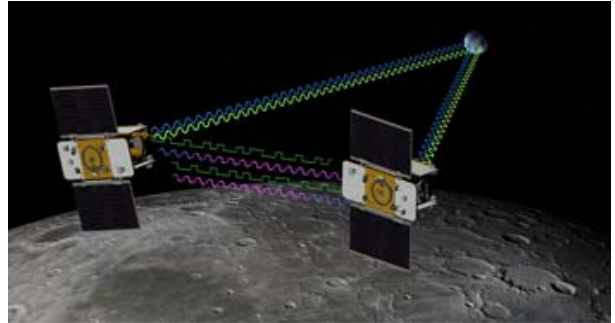


GRAIL Gravity Recovery and Interior Laboratory



Step I

Watch this video together:

<https://www.youtube.com/watch?v=43ImQ5Lsx78>

This short (no-audio) video shows the gravity field of the moon

http://www.nasa.gov/mission_pages/grail/news/grail20121205.html

Step II

Split up into two groups. Go through the material below.

Each group has to work on one of the following two questions. Gather information and summarize it in key points. Prepare for a short-presentation (3-5 min) of those key-points to the other and a third group (matlab tutorial students). Feel free to include a couple of images from the internet for your presentation.

You have time until 10 min before end of the class (~25 min).

Task 1) Provide a brief overview of the GRAIL mission (mission design, operation period, major differences to GRACE...) as well as its main objectives / science investigations. Focus on the gravity mission. Information is provided on the GRAIL mission webpage at MIT:

- a) <http://grail.mit.edu/> > About Grail
- b) <http://grail.mit.edu/> > Overview
- c) <http://grail.mit.edu/> > Objectives
- d) If time is left, you may browse further about the mission at:
<https://directory.eoportal.org/web/eoportal/satellite-missions/g/grail>

Task 2) Briefly explain the latest scientific results that were reported by NASA in the article below, just a few days ago. What is studied, why and what are the findings?

- a) Article about latest research results from GRAIL data:
<http://solarsystem.nasa.gov/news/2016/10/27/nasa-moon-mission-shares-insights-into-giant-impacts>
- b) If time is left, you may browse further about the mission at:
<https://directory.eoportal.org/web/eoportal/satellite-missions/g/grail>

Major GRAIL references, for your interest

Wieczorek, M. A. et al. (2013), The Crust of the Moon as Seen by GRAIL, *Science* (80-.), 339(February), 671–675, doi:10.1126/science.1231530.

Zuber, M. T. et al. (2013), Gravity Field of the Moon from the Gravity Recovery and Interior Laboratory (GRAIL) Mission, *Science* (80-.), 339(6120), 668–671, doi:10.1126/science.1231507.

Zuber, M. T., and C. T. Russell (2014), GRAIL: Mapping the Moon's Interior, 76 pp., Springer, New York